

## Sidac High Voltage Bilateral Triggers

... designed for direct interface with the ac power line. Upon reaching the breakdown voltage in each direction, the device switches from a blocking state to a low voltage on-state. Conduction will continue like an SCR until the main terminal current drops below the holding current. The plastic axial lead package provides high pulse current capability at low cost. Glass passivation insures reliable operation. Applications are:

- High Pressure Sodium Vapor Lighting
- Strobes and Flashers
- Ignitors
- High Voltage Regulators
- Pulse Generators

**MKP1V120  
MKP1V130**

SIDACs  
0.9 AMPERES RMS  
110 thru 280 VOLTS



### MAXIMUM RATINGS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	MKP1V120 MKP1V130	Unit
Off-State Repetitive Voltage	$V_{DRM}$	$\pm 90$	Volts
On-State Current RMS ( $T_L = 80^\circ\text{C}$ , Lead Length = 3/8", conduction angle = 180°, 60 Hz Sine Wave)	$I_T(\text{RMS})$	0.9	Amp
On-State Surge Current (Non-repetitive) (60 Hz One Cycle Sine Wave, Peak Value)	$I_{TSM}$	4	Amps
Operating Junction Temperature Range	$T_J$	-40 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40 to +150	$^\circ\text{C}$
Lead Solder Temperature (Lead Length $\geq 1/16''$ from Case, 10 s Max)	$T_L$	230	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Lead Lead Length = 3/8"	$R_{\theta JL}$	40	$^\circ\text{C}/\text{W}$

## MKP1V120 MKP1V130

ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$  unless otherwise noted; both directions)

Characteristic	Symbol	Min	Typ	Max	Unit
Breakover Voltage MKP1V120 MKP1V130	$V_{BO}$	110 120	— —	130 140	Volts
Repetitive Peak Off-State Current (60 Hz Sine Wave, $V_D$ = Rated $V_{DRM}$ ) $T_J = 125^\circ\text{C}$	$I_{DRM}$	— —	— —	5 50	$\mu\text{A}$
Forward "On" Voltage ( $I_{TM} = 1 \text{ A}$ )	$V_{TM}$	—	1.3	1.5	Volts
Dynamic Holding Current	$I_H$	—	—	100	mA
Switching Resistance	$R_S$	0.1	—	—	$\text{k}\Omega$
Breakover Current	$I_{BO}$	—	—	200	$\mu\text{A}$
Maximum Rate-of-Change of On-State Current MKP1V120, 130,	$di/dt$	—	90	—	$\text{A}/\mu\text{s}$

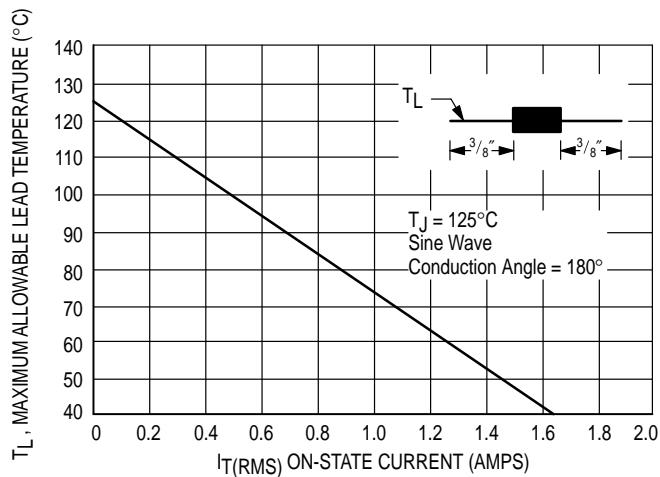


Figure 1. Maximum Lead Temperature

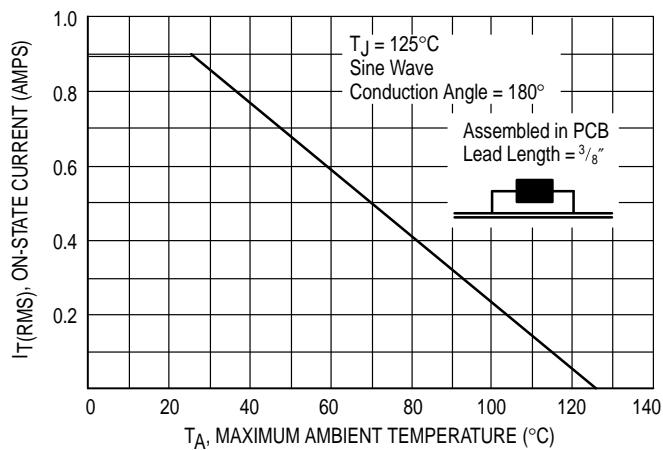


Figure 2. Maximum Ambient Temperature

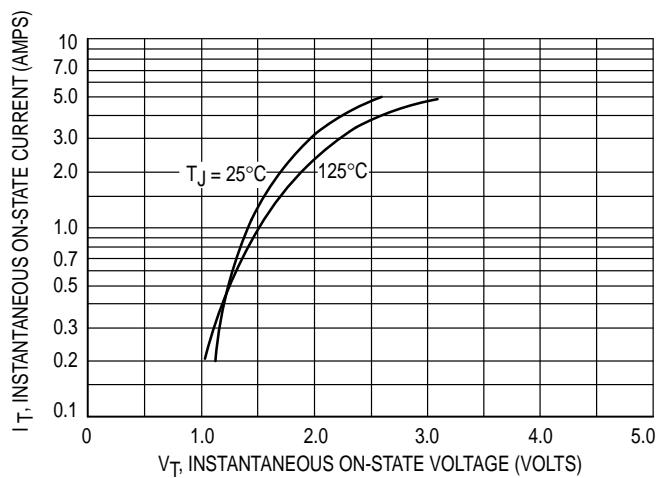


Figure 3. Typical On-State Voltage

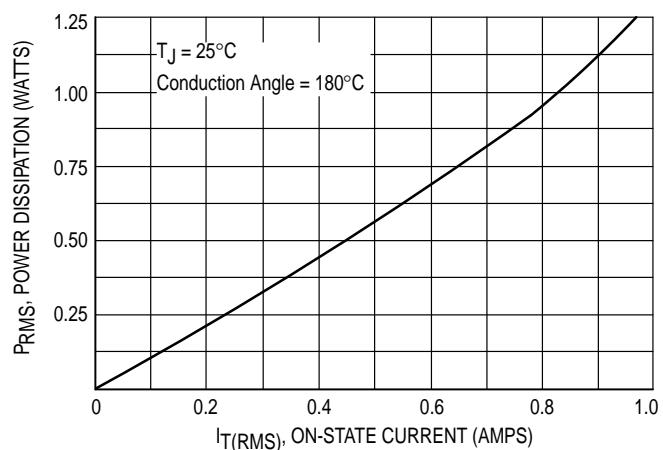
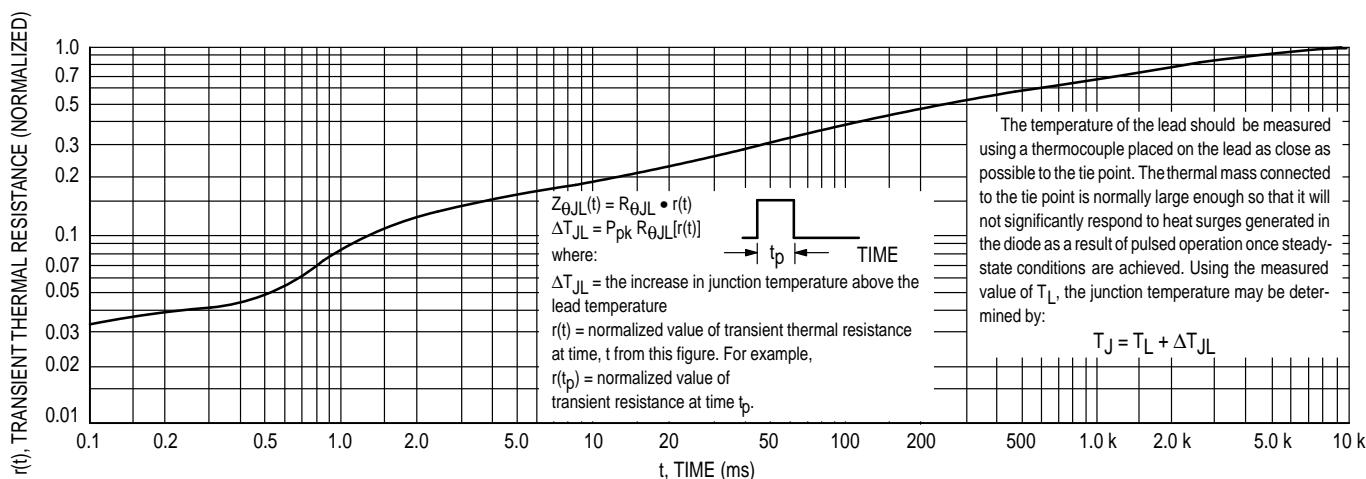
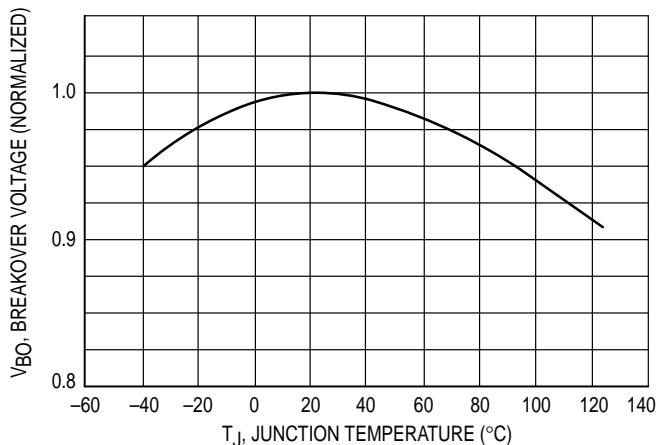
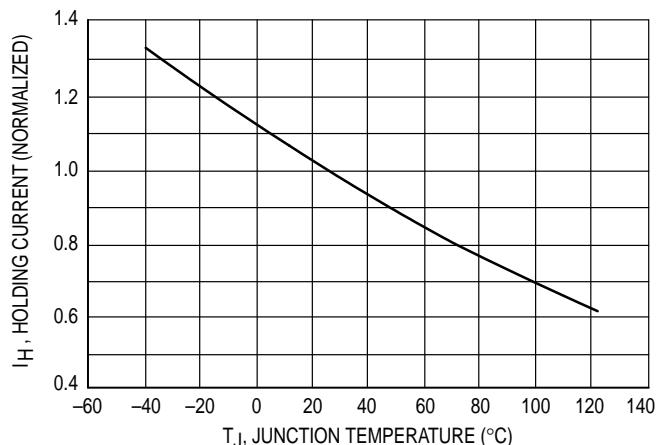
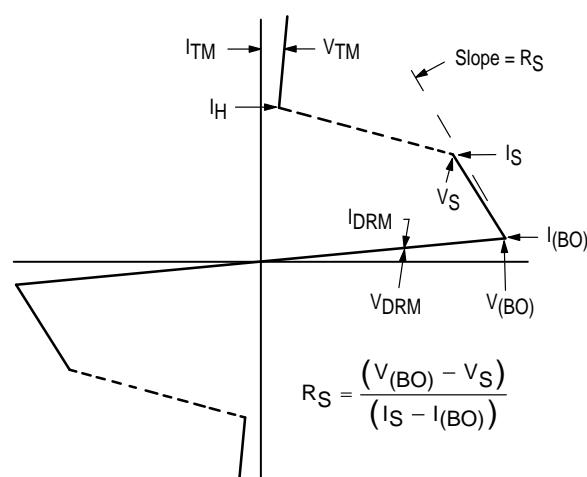
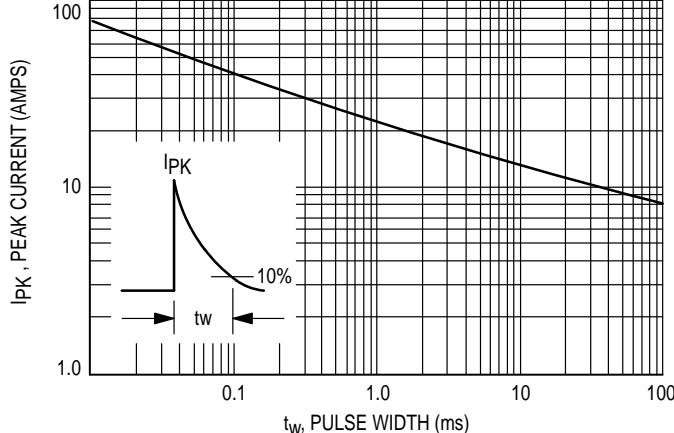
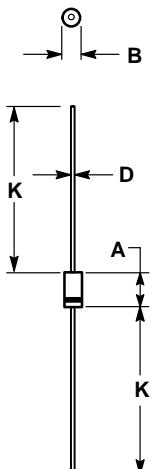


Figure 4. Power Dissipation

**THERMAL CHARACTERISTICS**

**Figure 5. Thermal Response**
**TYPICAL CHARACTERISTICS**

**Figure 6. Breakover Voltage**

**Figure 7. Holding Current**

**Figure 9. V-I Characteristics**

**MKP1V120 MKP1V130****PACKAGE DIMENSIONS****NOTES:**

1. POLARITY DENOTED BY CATHODE BAND.
2. LEAD DIAMETER NOT CONTROLLED WITHIN F DIMENSION.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	5.97	6.60	0.235	0.260
B	2.79	3.05	0.110	0.120
D	0.76	0.86	0.030	0.034
K	27.94	—	1.100	—

**CASE 59-04  
(DO-41)  
ISSUE M**

**DATE 09/25/84**

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters can and do vary in different applications. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

**Literature Distribution Centers:**

USA: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036.

EUROPE: Motorola Ltd.; European Literature Centre; 88 Tanners Drive, Blakelands, Milton Keynes, MK14 5BP, England.

JAPAN: Nippon Motorola Ltd.; 4-32-1, Nishi-Gotanda, Shinagawa-ku, Tokyo 141, Japan.

ASIA PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Center, No. 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong.